APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,461	04/09/2001	Larry V. Streepy JR.	121658-1000	8694

EXAMINER	
PHAM, HUNG Q	

7590   05/06/2004

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ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _09 March 2004_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _31-65_ is/are pending in the application.

    4a) Of the above claim(s) _51-60_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _31-50 and 61-65_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _6, 7 & 11_.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1.   Claims 51-60 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group II, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No.13.

Applicant's election with traverse of Group I in Paper No. 13 is acknowledged. The traversal is on the ground(s) that *two distinct inventions is not a serious burden to consider all of the claims in a single application. A review of the subject matter set forth in the claims shows that they are substantially related* (Letter of Election, paper No. 13, page 2, lines 15-17) This is not found persuasive because:

Inventions I-II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. For example, Group I is drawn to a method for interfacing with a multi-level data structure by selecting a concept object, displaying a first image, one or more second images, and displaying graphical elements representing an association between each first and second image. Group II is drawn to a method for displaying and creating relationships between different medical sources by selecting a medical concept, displaying another medical concept related to the selected one, displaying a billing code, medical code. See MPEP 806.05(d).

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 51-60 drawn to an invention nonelected with traverse in Paper No. 13. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

2.   New corrected drawings are required in this application; see Notice of Draftsperson's Patent Drawing Review for correcting. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

3.   Claim 62 is objected to because of the following informalities: *a medical term from one of of International Statistical Classification of Disease*. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 31-45, 61-62 and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerveri et al. [Java Interface to Human Anatomy Knowledge].**

Regarding to claims 31, 41 and 42, Cerveri teaches a method and system of accessing to anatomy knowledge through symbolic modality expressed by keywords taken from controlled or non-controlled terminology. As shown in FIG. 3 is a computer, a display communicably connected to the display, a memory communicably connected to the computer for storing the multi-level data structure. The method and system is based on a database where anatomical concepts have been organized into a hierarchical framework (Abstract). Anatomical concepts have been subdivided into categories, such as organ, bone, etc. and anatomical instances, such as atlas, the first cervical vertebra (page 387). An interface is provided to at the client side to access the Anatomy Knowledge Database (Client side Interface, page 387). A user could select the semantic search and specify an anatomical category into a predefined list to have a hierarchical tree result as in FIG. 5a. The tree can be browsed by expanding or collapsing the branches. By picking an anatomical category the user can obtain its definition. By selecting a particular instances and changing the relationship, the user can obtain partonomy tree or other characteristics as in FIG. 5b (semantic search, page 388). As shown in FIG. 5a, ethmoid bone as *a concept object stored in the multi-level data structure*

is selected and highlighted, and the file-like symbol as *a first image comprising* ethmoid

bone as *the selected concept object* with a plurality folder-like symbols as *one or more*

second images, which *comprising a parent concept object of the selected concept object is*

displayed. As shown in FIG. 5b is the *display* of *one or more child concept objects* of

ethmoid bone represented by folder-like symbol and file-like symbol as *one or more third*

images, which comprising cribriform plate left, olfactory foramina right... respectively as

the child concept objects of the selected concept object. Returning to FIG. 5b, frontal bone,

and occipital bone have a `consist_of` relationship with ethmoid bone and is *displayed*

as *one or more lateral concept objects* with file-like symbol as *one or more fourth images*,

which *comprise a lateral concept object of the selected concept object*. Cerveri does not

explicitly *teach the first, second and third symbol illustrating an association between each*

second image to the first image, each third image and the first image and each fourth image

and the first image respectively. However, as disclosed by Cerveri, other than `is_a`

relationship as hierarchical relationship, non-hierarchical relationships such as

`has_function_of, is_location_of, is_nerved_by, consist_of, contains,`

`affect` have been used to enrich the ontology (page 386). As shown in FIG. 5a and

5b, an indent inward is used to signify the parent-child relationship *an association*

between each second image and third image to the first image, a non-indent is used to

indicate the non-hierarchical relationships or lateral relationship such as `consist_of`

as *an association between each fourth image and the first image*, and obviously, these are

symbols for *illustrating the association*. It would have been obvious for one of ordinary skill

in the art at the time the invention was made to modify the Cerveri method and system

by using an indent inward or non-indent for illustrating an association between concept

objects in order to distinguish hierarchical relationship and non-hierarchical relationship

between objects.

Regarding to claim 32, Cerveri teaches all the claimed subject matters as

discussed in claim 31, but does not explicitly teach the step of *selecting a new concept*

object from one of the selected concept object, one or more parent concept objects, one or

more children concept objects, and one or more lateral concept objects; displaying a fifth

image comprising the selected new concept object; displaying one or more sixth images, each

sixth image comprising a parent concept object of the selected new concept object; displaying

a fourth symbol illustrating an association between each sixth image and the fifth image; if

the selected new concept object has one or more child concept objects, displaying one or more

seventh images, each seventh image comprising a child concept object of the selected new

concept object, and displaying a fifth symbol illustrating an association between each seventh

image and the fifth image; and if the selected new concept object has one or more lateral

concept objects, displaying one or more eighth images, each eighth image comprising a lateral

concept object of the selected new concept object, and displaying a sixth symbol illustrating an

association between each eight image and the fifth image. However, as disclosed by

Cerveri, the tree can be browsed by expanding or collapsing the branches. By picking

an anatomical category the user can obtain its definition. By selecting a particular

instances and changing the relationship, the user can obtain partonomy tree or other

characteristics as in FIG. 5b (semantic search, page 388). Thus, by selecting cribriform

plate left, for example, the tree will be expanding and similar to 5b, and obviously, the

hierarchical tree 5b and its expanding tree will indicate the step of *selecting a new concept*

object from one of the selected concept object, one or more parent concept objects, one or

more children concept objects, and one or more lateral concept objects; displaying a fifth

image comprising the selected new concept object; displaying one or more sixth images, each

sixth image comprising a parent concept object of the selected new concept object; displaying

a fourth symbol illustrating an association between each sixth image and the fifth image; if

the selected new concept object has one or more child concept objects, displaying one or more

seventh images, each seventh image comprising a child concept object of the selected new

concept object, and displaying a fifth symbol illustrating an association between each seventh

image and the fifth image; and if the selected new concept object has one or more lateral

concept objects, displaying one or more eighth images, each eighth image comprising a lateral

concept object of the selected new concept object, and displaying a sixth symbol illustrating an

association between each eight image and the fifth image as discussed in claim 31. It would

have been obvious for one of ordinary skill in the art at the time the invention was made

to modify the Cerveri method and system by expanding the hierarchical tree for a new

concept object in order to traverse the Anatomy Knowledge Database.

Regarding to claims 33 and 43, Cerveri teaches all the claimed subject matters

as discussed in claims 31 and 42, Cerveri further discloses *the first, second, third and*

fourth images comprise text strings (FIG. 5a and b).

Regarding to claims 34 and 44, Cerveri teaches all the claimed subject matters as discussed in claims 31 and 42, Cerveri further discloses *the first image is highlighted* (FIG. 5a).

Regarding to claims 35 and 45, Cerveri teaches all the claimed subject matters as discussed in claims 31 and 42, Cerveri further discloses *the first, second, third and fourth images, and the first, second and third symbols are displayed within a first viewing area* (FIG. 5a-b and page 388).

Regarding to claim 36, Cerveri teaches all the claimed subject matters as discussed in claim 35, Cerveri further discloses the step of *displaying one or more attributes of the selected concept object* (FIG. 4).

Regarding to claim 37, Cerveri teaches all the claimed subject matters as discussed in claim 36, Cerveri further discloses the step of *displaying one or more details of the selected concept object* (FIG. 4).

Regarding to claim 38, Cerveri teaches all the claimed subject matters as discussed in claim 37, Cerveri further discloses the step of *displaying one or more terms associated with the selected concept object* (FIG. 4).

Regarding to claim 39, Cerveri teaches all the claimed subject matters as discussed in claim 38, Cerveri further discloses the step of *displaying a work area for temporarily storing terms* (FIG. 4).

Regarding to claims 40 and 50, Cerveri teaches all the claimed subject matters as discussed in claims 35 and 42, Cerveri further discloses the step of *selecting either a microglossary panel, a term facet panel, a relations facet panel or a term phrase editor panel; and displaying the selected panel in a second viewing area* (FIG. 4).

Regarding to claim 61, Cerveri teaches a method and system of accessing to anatomy knowledge through symbolic modality expressed by keywords taken from controlled or non-controlled terminology. As shown in FIG. 3 is a computer, a display communicably connected to the display, a memory communicably connected to the computer for storing the multi-level data structure. The method and system is based on a database where anatomical concepts have been organized into a hierarchical framework (Abstract). Anatomical concepts have been subdivided into categories, such as organ, bone, etc. and anatomical instances, such as atlas, the first cervical vertebra (page 387). An interface is provided to at the client side to access the Anatomy Knowledge Database (Client side Interface, page 387). A user could select the semantic search and specify an anatomical category into a predefined list to have a hierarchical tree result as in FIG. 5a. The tree can be browsed by expanding or collapsing the branches. By picking an anatomical category the user can obtain its definition. By

selecting a particular instances and changing the relationship, the user can obtain

partonomy tree or other characteristics as in FIG. 5b (semantic search, page 388). As

shown in FIG. 5a, ethmoid bone as *a medical concept object stored in the multi-level data*

structure is selected and highlighted, and the file-like symbol as *a first image comprising*

ethmoid bone as *the selected medical concept object* with a plurality folder-like symbols as

one or more second images, which *comprising a parent medical concept object of the selected*

medical concept object is displayed. As shown in FIG. 5b is the *display* of *one or more child*

medical concept objects of ethmoid bone represented by folder-like symbol and file-like

symbol as *one or more third images*, which comprising cribriform plate left, olfactory

foramina right... respectively as *the child medical concept objects of the selected medical*

concept object. Returning to FIG. 5b, frontal bone, and occipital bone have a

`consist_of` relationship with ethmoid bone and is *displayed* as *one or more lateral*

medical concept objects with file-like symbol as *one or more fourth images*, which *comprise*

a lateral medical concept object of the selected medical concept object. Cerveri does not

explicitly *teach the first, second and third symbol illustrating an association between each*

second image to the first image, each third image and the first image and each fourth image

and the first image respectively. However, as disclosed by Cerveri, other than `is_a`

relationship as hierarchical relationship, non-hierarchical relationships such as

`has_function_of, is_location_of, is_nerved_by, consist_of, contains,`

`affect` have been used to enrich the ontology (page 386). As shown in FIG. 5a and

5b, an indent inward is used to signify the parent-child relationship *an association*

between each second image and third image to the first image, a non-indent is used to

indicate the non-hierarchical relationships or lateral relationship such as *consist_of*

as *an association between each fourth image and the first image*, and obviously, these are

symbols for *illustrating the association*. It would have been obvious for one of ordinary skill

in the art at the time the invention was made to modify the Cerveri method and system

by using an indent inward or non-indent for illustrating an association between concept

objects in order to distinguish hierarchical relationship and non-hierarchical relationship

between objects.

Regarding to claim 62, Cerveri teaches all the claim subject matters as discussed

in claim 61, Cerveri further discloses *the selected medical concept comprises a medical term*

from systemized nonmedical reference terminology (page 389).

Regarding to claim 64, Cerveri teaches all the claim subject matters as discussed

in claim 61, Cerveri further discloses the step of *displaying a medical code from a medical*

database associated with the selected medical concept (FIG. 4).

Regarding to claim 65, Cerveri teaches all the claimed subject matters as

discussed in claim 61, Cerveri does not explicitly teach the step of *displaying a medical*

procedure associated with the selected medical concept. However, as well known in the art,

the UMLS metathesaurus include terminologies designed for use in patient record

system, large disease and procedure classification used for statistical reporting and

billing (UMLS Knowledge Sources, Metathesaurus). It would have been obvious for one

of ordinary skill in the art at the time the invention was made to modify the Cerveri

method and system by linking a medical procedure with a selected medical concept as

in FIG. 4 for displaying in order to plan a medical procedure for a particular patient.

6.   **Claims 46-49 and 63 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over Cerveri et al. [Java Interface to Human Anatomy Knowledge] in

view of Dorne [USP 5,325,293].

Regarding to claim 46, Cerveri teaches all the claim subject matters as discussed

in claim 45, and further discloses the step of *displaying one or more attributes of the*

selected concept object in a second viewing area on the display wherein the attributes comprise

at least one of a medical code that relates to a medical concept (Cerveri, FIG. 4), but does

not explicitly teach the attributes is a *billing code*. Dorne teaches a method and system

for correlating medical procedures into billing code, for example CPT codes (Dorne, Col.

3, Lines 19-29). Therefore, it would have been obvious for one of ordinary skill in the art

at the time the invention was made to include a CPT code as an attribute of a medical

concept as taught by Dorn in order to plan a medical procedure for a particular patient.

Regarding to claim 47, Cerveri teaches all the claim subject matters as discussed

in claim 46, and further discloses the step of *displaying one or more attributes of the*

selected concept object in a third viewing area on the display wherein the attributes comprise

at least one of a medical code that relates to a medical concept (Cerveri, FIG. 4), but does

not explicitly teach the attributes is a *billing code*. Dorne teaches a method and system

for correlating medical procedures into billing code, for example CPT codes (Dorne, Col.

3, Lines 19-29). Therefore, it would have been obvious for one of ordinary skill in the art

at the time the invention was made to include a CPT code as an attribute of a medical

concept as taught by Dorn in order to plan a medical procedure for a particular patient.

Regarding to claim 48, Cerveri and Dorne teaches all the claim subject matters

as discussed in claim 47, Cerveri further discloses the step of *displaying one or more*

terms associated with selected concept object in a fourth viewing area on the display (Cerveri,

FIG. 4).

Regarding to claim 49, Cerveri and Dorne teaches all the claim subject matters

as discussed in claim 48, Cerveri further discloses the step of *displaying a work area for*

temporarily storing terms in a fifth viewing area on the display (Cerveri, FIG. 4).

Regarding to claim 63, Cerveri teaches all the claim subject matters as discussed

in claim 61, but does not teach the step of *displaying a billing code from a medical*

database associated with the selected medical concept. Dorne teaches a method and system

for correlating medical procedures into billing code, for example CPT codes (Dorne, Col.

3, Lines 19-29). Therefore, it would have been obvious for one of ordinary skill in the art

at the time the invention was made to include a CPT code as an attribute of a medical

concept as taught by Dorn in order to plan a medical procedure for a particular patient.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q PHAM whose telephone number is 703-605-4242. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Hung Pham
April 20, 2004

SHAHID ALAM
PRIMARY EXAMINER